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(54) Title: METHODS AND SYSTEMS FOR PROVIDING HAPTIC MESSAGING TO HANDHELD COMMUNICATION DEVICES

(57) Abstract: Embodiments of the invention relate to methods and systems for providing customized "haptic messaging" to users of handheld communication devices in a variety of applications. In one embodiment, a method of providing haptic messaging to a hand communication device includes: receiving an input signal associated with an event (210); determining a source of the event and selecting the control signal based on the determination (220); and outputting a control signal to an actuator coupled to the hand communication device (230). The control signal is configured to cause the actuator to output a haptic effect associated with the reminder event. An event in the above may be a reminder event or a status event (240).





SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

**Declaration under Rule 4.17:**

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent*

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# INTERNATIONAL SEARCH REPORT

Int'l Application No  
PCT/IB 03/05144

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03D7/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H03D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 483 695 A (M. PARDOEN) 9 January 1996 (1996-01-09)	1, 10
Y	column 6, line 57 -column 7, line 63; figure 4	8
Y	WO 98 45942 A (PHILIPS ELECTRONICS NV.) 15 October 1998 (1998-10-15) page 3, line 29 -page 5, line 23; figure 1	8
A	US 5 708 383 A (J. LEE) 13 January 1998 (1998-01-13) column 2, line 1 - line 19; figure 2	1
A	EP 0 430 508 A (RAYTHEON COMPANY ) 5 June 1991 (1991-06-05) column 6, line 56 -column 9, line 53; figure 1	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

In International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5483695	A	09-01-1996	FR 2705176 A1 AT 183344 T DE 69419961 D1 DE 69419961 T2 EP 0624959 A1 JP 6334553 A	18-11-1994 15-08-1999 16-09-1999 24-02-2000 17-11-1994 02-12-1994
WO 9845942	A	15-10-1998	WO 9845942 A2 DE 69820376 D1 EP 0909481 A2 JP 2000511742 T CN 1126250 B KR 2000016380 A US 6236847 B1	15-10-1998 22-01-2004 21-04-1999 05-09-2000 29-10-2003 25-03-2000 22-05-2001
US 5708383	A	13-01-1998	NONE	
EP 430508	A	05-06-1991	US 5136720 A DE 69026796 D1 DE 69026796 T2 EP 0430508 A2 JP 2028985 C JP 3188702 A JP 7067051 B	04-08-1992 05-06-1996 31-10-1996 05-06-1991 19-03-1996 16-08-1991 19-07-1995